

## **815 KAR 20:072. Installation standards for cast iron soil pipe and fittings.**

RELATES TO: KRS Chapter 318

STATUTORY AUTHORITY: KRS 318.130

NECESSITY, FUNCTION, AND CONFORMITY: The office is directed by KRS 318.130 through the State Plumbing Code Committee to adopt and put into effect a State Plumbing Code. This administrative regulation relates to the proper installation of cast iron soil pipe and fittings. This amendment is necessary to bring the administrative regulation into technical compliance with KRS Chapter 13A. No other substantive changes were made.

Section 1. The installation of cast iron soil pipe and fittings shall be made according to recommended procedures, since care taken in installing will assure the satisfactory performance of the plumbing drainage system.

Section 2. Instructions for Cutting Cast Iron Soil Pipe. (1) During installation assembly, pipe and fittings shall be inserted into the hub or into the gasket and firmly seated against the bottom of the hub or against the center rib or shoulder of the gasket. To provide a sound joint with field cut lengths of pipe, it is necessary to have the ends cut square and as smooth as possible with metal cutting saw or snap type cutters.

(2) Cast iron soil pipe, which may vary somewhat in toughness and resiliency, shall be cut with a twin-lever snap cutter or a ratchet type cutter equipped with a chain which contains equally spaced beveled cutting wheels. The following cutting procedure has been found to produce consistently good cuts:

(a) Position chain around pipe so that a maximum number of wheels are in contact with the pipe. Excessive space between the first and last wheel in contact with the pipe is almost certain to produce a poor quality cut.

(b) Score the pipe before final pressure is applied to complete the cut. Apply only enough pressure to the lever or ratchet handle to make the cutter wheels indent the pipe.

(c) Release the pressure and rotate tool a few degrees; then apply a quick final pressure to complete the cut. If a piece of pipe is unusually tough, score the pipe several times and a good cut can be made. If the cutter wheels become flattened or dull, it will be very difficult (if not impossible) to obtain a satisfactory cut. The life of the chain can be extended by reversing the chain to obtain equal use of all the wheels. The mechanical features of a cutter shall be kept in good working order.

Section 3. General Installation Instructions. (1) Vertical piping.

(a) Secure vertical piping at sufficiently close intervals to keep the pipe in alignment and to support the weight of the pipe and its contents. Support stacks at their bases and at sufficient floor intervals to meet the requirements of local codes. Approved metal clamps or hangers shall be used for this purpose.

(b) If vertical piping is to stand free of any support or if no structural element is available for support and stability during construction, secure the piping in its proper position by means of adequate stakes or braces fastened to the pipe.

(2) Horizontal piping, suspended.

(a) Support ordinary horizontal piping and fittings at sufficiently close intervals to maintain alignment and prevent sagging or grade reversal. Support each length of pipe by an approved hanger located not more than eighteen (18) inches from the joint.

(b) Support terminal ends of all horizontal runs or branches and each change of direction or alignment by an approved hanger.

(c) Closet bends installed above ground shall be firmly secured.

(3) Horizontal piping, underground.

(a) When trenches are dug too deep, support the piping with approved grillage laid on firm ground as denoted in 815 KAR 20:130. To maintain proper alignment during backfilling, stabilize the pipe in proper position by partial backfilling and cradling.

(b) Piping laid on grade shall be adequately secured to prevent misalignment when the slab is poured.

(c) Closet bends installed under slabs shall be adequately secured.

Section 4. Lead and Oakum Joint Installation. (1) Insert the spigot into the hub which has been properly cleaned.

(2) An oakum strand shall be inserted into the joint which is of a diameter that can be pressed into the joint by hand and sufficiently long to make three (3) turns around the pipe. Drive the strand of oakum to the bottom of the joint using a yarning iron. Pack the oakum solidly and evenly using a packing iron and hammer.

(3) Place additional strands of oakum into the joint until it fills the hub to within one-half (1/2) inch of the top, and using a packing iron and hammer, pack this oakum until it forms a uniform surface one (1) inch from the top of the hub.

(4) Pour molten lead into the joint at one (1) spot between the hub and spigot until it arches up slightly above the top of the hub.

(5) When the lead has cooled, drive it down at four (4) points around the hub using a caulking iron to insure uniform caulking.

(6) Caulk the joint on the inside and outside edges using a sixteen (16) ounce ball peen hammer and appropriate caulking irons.

Section 5. Compression Joint Installation. (1) Fold and insert the one (1) piece rubber gasket into the hub which has been properly cleaned.

(2) Apply special gasket lubricant to the spigot and inside of the neoprene gasket.

(3) Push, draw or drive the spigot into the gasketed hub with a pulling tool or suitable device.

Section 6. No-hub Joint Installation. (1) Clamp and gasket installation. The following procedures shall be taken to insure a proper joint:

(a) Place the gasket on the end of one (1) pipe and the stainless steel or cast iron clamp assembly on the end of the other pipe.

(b) Firmly seat the pipe ends against the integrally molded shoulder inside the neoprene gasket.

(c) Slide the clamp assembly into position over the gasket and tighten the bands or clamps as described below.

(2) Torquing bands. A properly calibrated torque wrench, set at sixty (60) inch pounds shall be used. The following procedure for applying torque to the band assembly shall be used: The stainless steel bands shall be tightened alternately and firmly to sixty (60) inch pounds of torque.

(a) Step 1. The inner bands shall be tightened alternately and firmly to sixty (60) inch pounds of torque.

(b) Step 2. The outer bands shall be tightened alternately and firmly to sixty (60) inch pounds of torque.

(3) Torquing clamps. A properly calibrated torque wrench, set at 175 inch pounds shall be used. The following procedure for applying torque to the clamp assembly shall be used: The stainless steel bolts shall be tightened alternately, gradually and firmly to 175 inch pounds torque. (9 Ky.R. 657; eff. 12-1-82; Am. 10 Ky.R. 1010; eff. 3-31-84; 17 Ky.R. 2885; eff. 5-3-91; TAm eff. 8-9-2007.)